



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,240	12/09/2003	Seishi Ohmori	P2059US	4879
8968 7590 02/29/2008 DRINKER BIDDLE & REATH LLP ATTN: PATENT DOCKET DEPT. 191 N. WACKER DRIVE, SUITE 3700 CHICAGO, IL 60606			EXAMINER BEMBEN, RICHARD M	
			ART UNIT 2622	PAPER NUMBER
			MAIL DATE 02/29/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/731,240

**Applicant(s)**

OHMORI ET AL.

**Examiner**

RICHARD M. BEMBEN

**Art Unit**

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 18-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/19/05, 2/20/08</u> | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of the invention of Group I, claims 1-17 in the reply filed on 20 December 2007 is acknowledged.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: (1) calculating the standard deviation in brightness from the brightness histogram and (2) calculating the average brightness from the brightness histogram. One could not compare a standard deviation to a threshold value without first calculating the standard deviation. The same reasoning applies to the average brightness. Subsequently, dependent claims 2-15 are also rejected.
4. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: (1) calculating the standard deviation in brightness from the brightness histogram. One could not compare a standard deviation to a threshold value without first calculating the standard deviation.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 1, 7, 10, 12-15 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Pub. No. 2003/0151674 to Lin.**

Regarding **claim 1**, Lin discloses a method of determining inappropriate exposure amounts in a digital image, the method comprising: obtaining a brightness histogram related to data of a digital image; if the standard deviation in brightness in the histogram is less than a lower limit deviation value and the average brightness in the histogram is less than a lower limit brightness value, then determining that the exposure amount in the digital image may be low.

Refer to paragraphs [0093]-[0096] and [0103]-[0106]; the mean value of the luminance (or brightness) is calculated in paragraph [0095] and if the mean does not fall within a range "B" then it is determined that the brightness may not be enough, i.e. if the mean is below the lower boundary of B or above the upper boundary of B, and the user is warned. Also, the standard deviation of the luminance (or brightness) is calculated in [0105] and if the standard deviation does not fall within a range "C", i.e. if the standard deviation is below the lower boundary of C or above the upper boundary of C, the user

Art Unit: 2622

is warned that the contrast is not enough. The relationship between proper exposure and contrast is inherent; both underexposed (too dark) and overexposed (too much light) images create images with low contrast (e.g. see U.S. Patent No. 7,053,954 col.1 ll.27-44 and U.S. Patent No. 7,038,820 which discuss the relationship between exposure and contrast).

Regarding **claim 7**, Lin discloses the limitations of claim 1 and further discloses visual indication. Refer to paragraph [0029] which describes the visual feedback.

Regarding **claim 10**, Lin discloses the limitations of claim 1 and further discloses that if the standard deviation in brightness in the histogram is greater than a lower limit deviation value, then determining the exposure amount to be acceptable. Refer to paragraphs [0103]-[0106]: the standard deviation of the luminance (or brightness) is calculated in [0105] and *only* if the standard deviation does not fall within a range "C", i.e. if the standard deviation is below the lower boundary of C or above the upper boundary of C, the user is warned that the contrast is not enough. If the standard deviation is with "C", then the contrast is appropriate. The relationship between proper exposure and contrast is inherent; both underexposed (too dark) and overexposed (too much light) images create images with low contrast (e.g. see U.S. Patent No. 7,053,954 col.1 ll.27-44 and U.S. Patent No. 7,038,820 which discuss the relationship between exposure and contrast).

Regarding **claim 12**, refer to the rejection of claim 10.

Regarding **claim 13**, Lin discloses the limitations of claim 1 and further discloses that the digital image is taken by a digital camera. Refer to paragraph [0025] and Figure 1.

Regarding **claim 14**, Lin discloses the limitations of claim 1 and further discloses that the method is performed by a digital camera. Refer to paragraphs [0028] and [0029] and Figure 1.

Regarding **claim 15**, Lin discloses the limitations of claim 12 and further discloses that the digital camera comprises a digital signal processor that performs the method. Refer to paragraph [0028], "a custom-made built-in ASIC, DSP, or general purpose processor [...]".

Regarding **claim 17**, Lin discloses a method of determining inappropriate exposure amounts in a digital image, the method comprising: obtaining a brightness histogram related to data of a digital image; if the standard deviation in brightness in the histogram is greater than a lower limit deviation value, then determining the exposure amount to be acceptable.

Refer to paragraphs [0103]-[0106]: the standard deviation of the luminance (or brightness) is calculated in [0105] and *only* if the standard deviation does not fall within a range "C", i.e. if the standard deviation is below the lower boundary of C or above the upper boundary of C, the user is warned that the contrast is not enough. If the standard deviation is with "C", then the contrast is appropriate. The relationship between proper exposure and contrast is inherent; both underexposed (too dark) and overexposed (too much light) images create images with low contrast (e.g. see U.S. Patent No. 7,053,954

col.1 ll.27-44 and U.S. Patent No. 7,038,820 which discuss the relationship between exposure and contrast).

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,546,116 issued to Brunk et al. discloses obtaining a histogram and calculating a centroid, peak value, root-mean-square, median value, deviation value, etc. and using the calculated value as a pointer in a look up table to determine an appropriate exposure value.

U.S. Patent No. 6,362,848 issued to Lohscheller et al. discloses obtaining a histogram and calculating the standard deviation and the average, which are used in determining whether an exposure correction factor is appropriate or inappropriate.

U.S. Patent No. 5,264,940 issued to Komiya et al. discloses obtaining the average and the standard deviation of the luminance signal and using the average and the standard deviation to control the exposure time in column 16 lines 1-16. Komiya ('940 Patent) relies on U.S. Patent No. 4,926,247 issued to Nagasaki et al. to describe the exposure control process. However, the Nagasaki patent fails to disclose using the average and standard deviation in the method disclosed by Applicant's claimed invention.

U.S. Patent No. 6,825,884 issued to Horiuchi discloses performing histogram analysis on an image of short exposure (SE) and an image of long exposure (LE) to

Art Unit: 2622

create a synthesized image from the SE image and the LE image with proper exposure, refer to Figures 8A-B.

U.S. Patent No. 7,286,177 issued to Cooper discloses a digital camera with a display that visually alerts a user if the exposure is not acceptable, refer to Figures. 3-5A.

U.S. Patent No. 6,765,619 issued to Deng et al. discloses optimizing the exposure time in a digital image capture device by performing statistical analysis on a histogram, however does not elaborate on what that statistical analysis involves. Refer to Figure 5C and column 5, lines 12-20.

U.S. Patent No. 6,694,051 issued to Yamazoe et al. discloses determining over or under exposure based on a calculated average luminance value. Refer to the fifth embodiment of the invention.

8. While not prior art, U.S. Patent No. 7,079,702 issued to Watanabe et al. discloses determining whether the brightness of an image is "bright", "normal", or "dark" based on the mean value and the standard deviation of a histogram of the luminance value of the image. Refer to column 1, lines 58-67.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard M. Bemben whose telephone number is (571) 272-7634. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2622

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RMB

2/25/08

A handwritten signature in black ink, appearing to read 'Nhan Tran', written in a cursive style.

NHAN T. TRAN